

Manuel Briand

Streaming Media Engineering, Video Quality, Accessible and Immersive Audio

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French-American dual citizen · French (native), English (fluent), Swedish (intermediate), Spanish (intermediate), Portuguese (basic)

Summary

Principal Media Streaming Engineer with a PhD in DSP and 36 granted US patents (16 invention families). I design the content-aware ABR stacks behind Disney+, for every format from 4K HDR and IMAX to the new 9:16 vertical video, and own perceptual video and audio quality for Disney streaming: ABR stacks that cut Disney+ VOD delivery by 15% on average while improving perceived quality, plus dialogue clarity and automated quality control.

Skills

Video Quality & Encoding	VMAF, CAMBI, subjective testing · HEVC, AV1, H.264 · HDR10, Dolby Vision · per-title ABR
Audio	Dolby Atmos (JOC, AC-4), DTS:X, IAMF · loudness (EBU R128, ATSC A/85) · dialogue intelligibility
Streaming	HLS, DASH, CMAF, SSAI, multi-DRM
ML for Media	Python, PyTorch · Whisper, SpeechBrain, MMS, Demucs
Engineering	C/C++ DSP, FFmpeg, AWS, Docker

Work Experience

Disney Entertainment & ESPN Technology

Principal Media Streaming Engineer
2021–Present

- Own visual and audio quality (VQ/QoE) evaluation for Disney streaming: SDR, HDR, IMAX, and Atmos.
- Invented the Dialogue Clarity Engine and accessible-audio renderer, backward compatible with 100% of devices; production integration complete.
- Design the content-aware (CAE) ABR stacks for every Disney+ format, including the new 9:16 vertical video (UHD and FHD, SDR and HDR); per-variant objective and perceptual scoring cut VOD delivery by 15% on average, up to 40% on the most-watched titles.
- Invented a way to adapt cinematic sound to vertical video: 16:9-to-9:16 cropping data re-balances the soundfield to follow what stays in frame (in development, patent pending).
- Designed an automated VQ flow from the ground up (chaptered QC payload, content-adaptive playback speed, patented as US 12,236,979) with automated QC scoring across ABR rendition configurations.
- Built the language-QC pipeline for dubs and subtitles: voice-activity detection, adaptive windowing and a Whisper, VoxLingua107 and MMS cascade covering 30 languages (24 validated so far); no file falsely flagged on a 187-file validation set, about 24× faster than real time (case study).
- Teach the ingest and QC teams to run subjective reviews and to use and improve the automated QC pipeline, as I did with QC teams at DTS and DIRECTV.
- Co-developed DIS, an objective dialogue intelligibility score, with Fraunhofer: modeling, features, validation, and scoring tools.
- Completed production integration of the Dialogue Clarity Engine on Skywalker Sound’s CODA Edge (on-premise, containerized), and demoed personalized-audio prototypes to Disney+ creative teams.
- Built production ML systems for speech and audio understanding, including dialogue-clarity models integrated for production (presenting at the AES Show in Nashville, Tennessee, on Nov 1, 2026).

DIRECTV / AT&T

Principal Audio Scientist
(DIRECTV), then Principal
Systems Architect (AT&T)
2015–2021

- Engineered content-specific encoding presets yielding hundreds of thousands in annual CDN savings.
- Filed 2 patent applications (pending): horizontal-to-vertical audio soundtrack generation; crossfade rendering for adaptive multi-view live streaming.
- Lead architect for the DIRECTV 4K/HDR/Atmos (UHD) service launch in 2016, a cross-functional initiative from strategy to execution.
- Pushed leadership to adopt CMAF/HLS across live and cloud DVR, reducing egress costs and production issues by more than 50% on Android, Fire TV and Roku.
- Built the case for \$650K a year in cloud DVR storage savings by compacting the ABR ladders of old recordings (90% of stored volume, under 10% of viewing), validated against playback KPIs on Fire TV, Android, and iOS/tvOS.
- Lead AV architect for the AT&T TV set-top box: cleared partner-app audio integration and certification blockers with a driver update mixing the Google Assistant into live audio.
- Consolidated live audio (channels, ad insertion, and described video) onto a single loudness profile, cutting audio variants per live channel from 4 to 2.
- Grew engineers: an intern I mentored was hired full time; led the KPI-emulator project with a Cal State LA student team, and supervised the internship that built audio-fingerprint “skip intro” detection.

DTS Inc.

Senior R&D Engineer
2011–2015

- Earned the CTO Award for the ATSC 3.0 next-generation audio submission licensed as DTS:X: channel- and object-based audio for IMAX theaters and luxury automotive.
- Developed the DTS:X architecture: moved it from a low-bitrate and scalable hybrid, which could not compete with true low-bitrate codecs, to one design running from low bitrate up to lossless, the DTS:X on the market today; lead developer and tester for the ATSC 3.0 submission.
- Designed the DTS:X bitstream syntax, led the effort towards a fixed-point implementation of the DTS:X audio decoder and developed a suite of “Golden-Ears” bitstream conformance tests for 3rd party implementations.
- Directed and oversaw the design of HLS & DASH scalable audio encoding and packaging technologies for Music, Radio and Video Streaming services using DTS-HD.
- Contributed audio bitstream signaling to DASH-IF IOP, HLS Authoring Spec for Apple TV and CTA WAVE (formerly Web Application Video Ecosystem).

Ericsson AB

Research Engineer
2007–2011

- Received the CTO Award for innovative contributions to the ITU-T G.719 speech and audio standard.
- Designed G.719’s perceptual model and a new bandwidth-extension algorithm with noise filling.
- Shipped prototype Matlab and production C/C++ reference software to the ITU-T, evaluated with 3GPP, ITU and MPEG quality-measurement tools.
- Drove technical improvements into ITU-T audio standards, validated by objective measurements and listening tests.

Education

Grenoble INP, France 2007	Doctor of Philosophy in Digital Signal Processing and Computer Science. Industrial (CIFRE) PhD with Orange Labs, where both interns I supervised went on to PhDs.
University of Rennes 1, France 2003	Master of Science in Digital Signal and Image Processing
ENSSAT, Lannion, France 2003	Bachelor of Engineering

Industry

Founding member of the CMAF Industry Forum; member of the Alliance for Open Media (AV1, AV2, IAMF) and the Streaming Video Technology Alliance (SVTA). Contributor to AES, ATSC (S34-2), CTA WAVE, DASH-IF, SMPTE and the SVG DTV Audio Group. Reviewer for AES and IEEE.